

REMARKS/ARGUMENTS

Claims 1-13, 15-20, and 22-28 are pending, and are not currently amended.

Applicants note with appreciation the allowance of claims 18-20 and 22-28.

Claims 1-13 and 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Singh et al. (USP 6,191,046) in view of Lai et al. (USP 6,136,680). The Examiner acknowledges that Singh et al. does not disclose depositing a nitrogen-containing fluorinated silicate glass layer onto the substrate. Singh et al. merely discloses forming an FSG layer 26 "by PECVD using SiF₄, TEOS and O₂ as reactants" (col. 5, lines 40-42). "Alternatively, SiF₄, TEOS, O₂ or N₂, and NF₃ or F₂ may be used as reactants to produce an FSG film." Column 5, lines 42-43. Singh et al. says nothing about depositing a nitrogen-containing fluorinated silicate glass layer. Moreover, there is no barrier layer formed over the FSG layer 26. The layer 25 is merely an ARC which is formed below, not over, the FSG layer 26. Lai et al. is cited for allegedly disclosing a barrier layer formed over or below an FSG layer.

The Examiner alleges, however, that "inherently some of the nitrogen in the plasma reaction would combine with the other reactants to form nitrogen containing fluorinated silicate glass." This is speculative. Nitrogen is often used as a carrier gas or is part of a process gas for depositing a layer that does not contain nitrogen, and does not become part of the layer to be deposited. The use of N₂ or NF₃ in a deposition process does not inherently produce a layer that contains nitrogen.

Even assuming, *arguendo*, that the Examiner's allegation were true, it still would not support a *prima facie* showing of obviousness. "That which may be inherent is not necessarily known." *In re Spormann*, 150 U.S.P.Q. 449, 452 (C.C.P.A. 1966). "Obviousness cannot be predicated on what is unknown." *Id.* In this case, Applicants have discovered that a nitrogen-containing FSG layer exhibits excellent adhesion to an overlying or underlying barrier layer, exhibits a reduction in dielectric constant, and has enhanced stability (page 3, lines 1-8). There is nothing in Singh et al. to indicate that any of these advantages or features of the claimed invention are known.

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PATENT

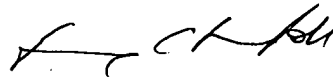
Further, "a retrospective view of inherency is not a substitute for some teaching or suggestion" in the art. *In re Newell*, 13 U.S.P.Q.2d 1248, 1250 (Fed. Cir. 1989). Singh et al. is devoid of any teaching or suggestion for the deposition of a nitrogen-containing FSG layer. Singh et al. merely discloses forming an FSG layer. Accordingly, Applicants respectfully submit that the cited art does not support a *prima facie* showing of obviousness. For at least the foregoing reasons, claim 1-13 and 15-17 are patentable over Singh et al. and Lai et al.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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